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AIR FORCE SERVICES WEB SITE DESIGN:
AN EXPLORATORY STUDY OF
INFORMATION NEEDS AND EFFECTIVE MARKETING APPLICATION

A Thesis

Submitted to the Faculty

of

Purdue University

by

Bonnie S. Ward

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Science

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ABSTRACT

Ward, Bonnie S. M.S., Purdue University, August 2001. Air Force Services Websites: An Exploratory Study of Information Needs and Effective Marketing Application. Major Professor: Alastair M. Morrison.

The Internet is dramatically changing the way people research information, communicate, make decisions, and the way in which they buy goods and services. Travel and hospitality products are reputed to be one of the most suitable products for sale over the Internet. The Air Force career field that performs the functions of the hospitality industry is known as Services. The purpose of this study was to evaluate the degree to which Air Force Services units are exploiting the unique marketing potential of the Internet. Specifically, this study strived to measure the effectiveness of current Services Websites. It was designed to identify the information needs of active duty personnel on Services Websites and to analyze current Services sites in terms of content characteristics and application of marketing concepts. Results from this research found significant differences of interest in Services activities as well as desired elements on Services Websites. Like most commercial companies, Services units are making little use of the Internet, treating it simply as a publishing medium. The information delivery, interactive communication and transaction capabilities lie untapped. The Web presents a fundamentally different environment for marketing activities than traditional media, therefore, the results of this study are discussed in terms of reconstructing Services marketing activities in forms more appropriate for this new medium.

CHAPTER ONE: INTRODUCTION

1.1 Advances in Internet Use

Information technology has dramatically changed and continues to transform business operations across industries. From retail, to education, to national defense, information technology is being implemented at lightening speed. The Air Force has embarked on a new strategy that has this branch of the military on a fast track to modernize its information systems. This strategy is based on adapting the latest information technologies to give Air Force personnel quick and easy access to essential information wherever they are.

The Internet, an example of a leading, innovative information technology, has received a great deal of attention recently. This technology is not new to the Air Force, in fact, the Internet was initially developed by the United States Department of Defense for research purposes. The Defense Advanced Research Projects Agency created a community of networks between geographically scattered researchers in order to link an unlimited number of computers together. This network became known as the ARPAnet. In the late 1980s, the ARPAnet began to link various universities and corporations together using common protocols which resulted in the emergence of the modern Internet (Verity, 1994).

The phenomenal acceptance and usage of the Internet is making it difficult to monitor its growth. The art of estimating how many are online throughout the world is an inexact one at best. Surveys abound using all sorts of measurement parameters. According to newly released statistics from Nua Internet Surveys, 407.1 million people now have Internet access worldwide.

This is more than double the number who had access in September 1999, when 201.05 million people were online (Nua, 2000). Many authors contend that the total number of Internet users and their rate of growth is no longer relevant because the Internet is here to stay and will keep on growing in size eventually encompassing a major proportion of the world population (Hoffman and Novak, 1999; Strauss and Frost, 1999).

1.2 Internet Use in the Air Force

The Internet has become a major force in building new relationships between customers and companies (Dussart, 2000; Bharat, R. 1999; Sivadas, Grewal and Kellaris, 1998). The Web has been employed by many functions across the Air Force and reports of new Websites and online services appear in Air Force news publications regularly.

The Air Force has taken initiatives to deliver training and education more quickly, to more people, for fewer dollars. Air Force personnel now have access to more than 1,000 Information Technology courses on line, thanks to the opening of the Air Force Computer Based Training System's Central Site. While at work, on temporary duty, or at home, military members and civilians can take courses on their computers in such areas as specialized technical skills, basic business applications, software programming and World Wide Web administration (AFPN, Jun 2000). The Defense Finance and Accounting Service now provides Air Force members the ability to make changes to their pay via the Internet or telephone from a computer desk at work, at home, if they are deployed around the world, or if they are changing stations (AFPN, Aug 2000). The Internet has even been employed for morale purposes. At Offutt Air Force Base, when dorm residents go to the dining facility for a meal, they can also get servings from a new cyber café as well. The café is a glass-enclosed area, set apart from the rest of the dining facility, where dorm residents can relax and use the computer services. Open 24 hours a day, the

computer lounge is designed to improve dorm residents' morale and quality of life by providing after hours access to the Internet (AFPN, Sep 2000).

The Internet is dramatically changing the way people research information, communicate, make decisions, and the way in which they buy goods and services. Travel and hospitality products are reputed to be one of the most suitable products for sale over the Internet, as they are almost entirely information-based. In contrast with "hard goods" such as books, all a consumer purchasing a travel product or hospitality product immediately receives is a piece of data such as a confirmation number (Buhalis, 1998; Smith and Jenner, 1998).

Services is the careerfield in the Air Force that performs the functions of the hospitality industry. Services provides combat support as well as community service programs that enhance the quality of life for Air Force members and their families. These programs improve morale, productivity, and retention by offering a full range of military and community support programs at most major Air Force bases. For the purposes of this study, Services functions were grouped into three general activity categories: hospitality and leisure, family-related and community support (Table 1).

The scope of Air Force Services operations is quite extensive. Approximately \$1 billion a year in revenue is generated while \$6.2 million in cash moves through Services cash registers every day. Air Force dining operations are ranked 87th in size among food businesses. With 32,600 bed spaces, Air Force lodging operations place in the top 25 lodging operations in the hospitality industry. Over 306,000 Club members make Air Force Clubs the 87th largest food and beverage operation worldwide. Services employs over 40,000 people with 4,859 active duty military and 36,344 civilians.

Services has long recognized the importance of promoting its products and services and has maintained marketing departments within base-level organizations for years. Traditionally, information delivery has been through the use of fliers, calendars, posters, news releases and base

marquis postings. The increasing attention to Internet use has not been overlooked and most Air Force Services units have a Website. Like most commercial companies, however, Services units are making little use of the Internet, treating it simply as a publishing medium (Jung, 1999; O'Connor and Horan, 2000; Vandermewe, 1999). Services Websites vary drastically from installation to installation in content and quality, and, like their civilian counterparts, do not take advantage of the marketing capabilities of the Internet in terms of information delivery, interactive communications, and transaction capability (Quelch and Klein, 1996).

CHAPTER TWO: LITERATURE REVIEW

2.1 Transformation of Marketing Principles

The Internet has been characterized as the ultimate medium that promotes interactivity, which in turn, reshapes the marketing paradigm (Avlonitis and Karayanni, 2000). The traditional marketing communications model for mass media (Lasswell, 1948) holds that mass communication is a one to many process whereby a firm transmits content through a medium to a large group of consumers. The key feature underlying all models of mass media efforts is that there is no interaction between consumers and firms. The Internet's ability to reach the masses individually yet economically is making marketing history. The new model underlying marketing communications in hypermedia computer mediated environments like the Web (Hoffman and Novak, 1996) holds that consumers can interact with the medium, businesses can provide content to the medium, and in the most radical departure from traditional marketing environments, consumers can provide content to the medium.

Throughout the literature, the Internet is described as a one-to-one medium, (Butler and Peppard, 1998; Dussart, 2000; Gilmore and Pine, 1997; Prabhaker, 2000; Vandermerwe, 1999; Walsh and Godfrey, 2000). It is described as a relationship medium; a vehicle for listening to the marketplace and developing one-to-one relationships with people. The technology exists for consumers to interact with marketing organizations in a more rapid and cost-effective manner than ever before. Such communication enables the development of close relationships, to the

point where marketers can actively anticipate customer needs and wants (Butler and Peppard, 1998; Armstrong and Hagel, 1995). The Internet is the first medium in which true mass customization is possible.

Simply transposing traditional marketing and advertising paradigms onto this new medium will not work. It is not enough to use the technology simply to automate existing processes or to push more existing products or services through an electronic channel (Cross, 1994; Vandermerwe, 1999). Businesses and industries must strategically change the way they deal with customers by offering an integrated total experience. Because the Web presents a fundamentally different environment for marketing activities than traditional media, conventional marketing activities are being reconstructed in forms more appropriate for the new medium (Hoffman and Novak, 1996). This literature review follows the classical strategic marketing model of the 4Ps – Product, Price, Promotion and Place which has the advantage of simplicity as well as time-tested acceptance. In addition, the 4Ps are augmented with a fifth principle – customer relations, as this aspect is not adequately captured by the 4Ps.

2.2 Transformation of Products

Competing on the Internet is different from competing in the traditional industrial world. Competition no longer takes place in the physical marketplace but in the marketspace (Rayport and Sviokla, 1994). The content of a transaction is different in that it is based on information about the product or services rather than on its physical appearance or attributes. Unlike traditional communications media, the use of voice, video, text and images provide a richer picture of a company's products. Also, space is unlimited in this new medium and companies are not constrained to purchasing limited physical space as with newspapers, magazines or billboards.

2.2.1 Availability of Product-Related Information Online

On the Web, the consumer has much more control over when they access the information, what parts they view, and in what order. Online “brochure-ware,” or traditional marketing material reproduced electronically on the Web is not effective. Users need to be presented with valuable content and useful functionality, or they won’t return (Roth, 1998). A high proportion of companies feature product catalogs in one form or another with varying levels of detail. While most cover a whole product range, only a handful provide information or comparisons with a competitor’s products. This is interesting because according to research, customers are turning to the Internet to avoid hassles and save time (Connolly, Olsen and Moore, 1998; Rao, 1999; Vandermewe, 1999). Companies who proactively provide this information on their sites, may keep customers at their site for a longer period of time, as well as, affect customer satisfaction and confidence. Consumers today need more detailed information and are impulsive, impatient, and demanding, desiring instant gratification (Buhalis, 2000).

2.2.2 Product Customization

The past decades have seen a shift of the balance of power away from large manufacturers to consumers (Cross, 1994). Faced with increased competition and a shift of power to the consumer, marketers have put greater emphasis on customer orientation and satisfaction. Academic researchers have been drawing attention to emerging information technologies and have predicted for almost a decade that these technologies will lead to a new era in marketing. Pepper and Rogers as early as 1993 and Avlonitis and Karayanni as recently as

2000 argued that marketers will target "differentiated" products to very narrow (even individual level) segments. Dell pioneered this concept by transforming its business model of direct selling to one of mass customization in which each customer is able to design their own PC on-line. Dell custom-builds each computer so that rarely do two computers leave the factory with exactly the same configuration. Product differentiation can be seen across industries on the Internet. Disney allows buyers to customize commodities like mugs and mousepads and design custom greetings via Design On-Line. Customers can create a CD with their own selection of tracks with CDNow.com. Landsend.com uses a 3D on-line model of the customer to personally recommend a range of suitable swimwear and 'mix and match' beachwear options, based on a customer's size and profile. Customer's can even custom-design eyewear on-line using Paris Miki's Japanese site. Using a self-scanned image, customer's view eyewear best suited to their lifestyle and facial features.

The Internet's ability to personalize products and services with pinpoint precision adds up to an incoming ballistic missile aimed at the very foundations of modern-day commerce. It signals dramatic change for how manufacturers, distributors, and retailers will be organized and run. Today, most companies organize themselves by products: Product managers are the basic drivers for marketing. In the future, it is predicted that companies will instead have customer managers: Their job will be making each customer as profitable as possible by crafting products and services to meet individual needs (Hof, Green and Himelstein, 1998).

2.2.3 Customer Participation in Product Design

The interactive technology that has shifted the power to consumers in determining what gets produced and marketed, also allows them to directly influence product research and design

(Hoffman and Novak, 1996; Rao, 1999). Today's consumer is increasingly proactive. The Internet not only offers merchants the ability to communicate instantly with each one of their customers, it also lets those customers talk back so that they can demand unique products and customized services. Creating products and services with active and continuous involvement of the customer has become one of the keys to competitive success. The upshot for companies is that actual customer demand, not forecasts, will drive production while the obvious outcome for consumers is that they will be able to obtain exactly what they want (Hof, Green and Himelstein, 1998; Rayport and Sviokla, 1995).

2.2.4 Product Characteristics

As a new channel for marketing, the Web is capable of accommodating many different kinds of products and services. Due to the nature of electronic channels, however, some products are more suitable for marketing on the Web than others. Electronic commerce is gaining much attention from researchers and practitioners who have attempted to identify which products are more suitable for marketing electronically and why (Liang and Huang, 1998) and what characteristics impact a product's adaptability to online marketing (Bonn, Furr and Susskind, 1998; Kiang, Raghu and Shang, 2000).

Many researchers feel that hospitality and tourism related products and services are ideally suited for the Internet. Clyde and Landfried (1995) commented on the potential of the Web's hypermedia functionality for tourism product distribution. Frew and Dorren (1997) detailed the product attributes of tourism service providers who sell perishable, intangible, heterogeneous, and high-risk products. They believe the developments in electronic communications are particularly significant for the hospitality industry.

2.3 Transformation of Price

Websites must provide the information customers are looking for, and the information must be easy to find. Price is one of the most frequent information requests received by companies. In a study by Dutta and Segev (1999), only half of the surveyed firms displayed prices for their own products and less than five percent displayed prices for competing products. A very small fraction (3%) of surveyed companies offered any form of dynamic price negotiation or customization to customers. Airline companies appeared to be leaders along the pricing dimension by dynamically varying prices and allowing customers to make bids for specific tickets.

The Internet is about choice, freedom, experience and control. New 'electronic intermediaries' are present on the Web that provide a free comparison of product offerings from competing firms. For example, virtual travel agencies such as Expedia and intelliTRIP provide comparisons of different airline airfares for any particular route. Companies that provide comparison information within their Website, recognize that if customers are stonewalled at a site, it will frustrate them and they will go elsewhere. They also recognize if consumer information needs are met, they are more likely to return.

2.4 Transformation of Promotion

The Web is quickly becoming a mainstream promotional and sales medium. Promotions on the Internet are similar in many respects to promotions in the 'traditional' marketplace: price reductions, discounts and prizes. Enticing promotions and deals are advertised all over the Internet and many companies have special discounts on Internet orders.

Although promotional content may be similar, the interactive nature of the Web provides unique capabilities not found in other mediums. Companies use on-line games and contests to involve customers and retain their attention. For example, TV Guide Online encourages visitors to enter the TV Guide Awards Sweepstakes and vote for their favorite celebrities as well as a chance to win a million dollars. The United States Postal Service site features contests that allow users to participate and submit entries for designing new stamps. Websites also offer supplemental promotional opportunities often by way of links to related sites that might be of interest to customers. For example, the Dutch financial company, ING Group, provides links to Dutch tourism sites from its home page.

The interactive features of the Web also facilitate customization of promotions to very specific market segments. The deployment of target promotion activities, for example, the electronic transmission of paperless and costless product catalogues or brochures containing selective information can now be sent to a segment of one or a segment of thousands. Armstrong and Hagel (1995) predict that marketers will eventually have the ability to microsegment not just at the level of the individual customer but also at the level of the individual customer at specific points in time.

2.5 Transformation of Place

The Internet is challenging the traditional distribution structures that firms have employed to get goods and services to market. In particular, the Web has emerged as a powerful new channel for distribution that has rendered many intermediaries obsolete and radically revamped the value chain in most industries. The value chain is a model that describes a series of value-adding activities connecting a company's supply side with its demand side (Rayport and

Sviokla, 1995). Customers don't see product, price, promotion, and place as separate variables. This is particularly true in the interactive Web environment. All the variables interact; they cannot be separated. What the customer does see is information that wraps product, price, the selling message and the store into one big value proposition. Equally important, customers in the electronic marketspace expect value propositions to be tailored to them personally. On the Internet, the value-adding steps are virtual in that they are performed through and with information.

The Internet not only provides information and serves as a mechanism for communication it is also an environment for conducting transactions and a potential channel for actually delivering products or services to the consumer (Angehrn, 1997). This ability to serve as both a transaction and physical distribution medium for certain goods is a unique feature of Internet marketing.

Using the Internet as a transaction channel, orders, invoices and other business documents can be sent electronically and payments can be made as well. Andrews and Trites (1997), Long (1997) and McKim (1997) agree that the Internet streamlines transaction processing by reducing paperwork and transaction costs. Online transactions are also believed to improve visibility and reach a much bigger customer base (Long, 1997), improve revenues by exploiting cross-selling opportunities (Eichhorn and Helleis, 1997), and assist in customizing promotions and sales to individual customers (Hawn, 1996). Concerns about security and the quality of customer service deter some customers from completing transactions online. Despite these concerns, online consumer shopping increased 46% in 2000 with total online sales reaching \$56 billion (ActiveMedia, 2001). More than half (57%) of all consumer-oriented websites actively sell products and services to consumers and accept online orders while another third (36%) engage in marketing activities at the site but do not take orders. Online sales for business-to-consumer marketers are projected to reach \$1.1 trillion by 2010 (Activemedia, 2001).

As a channel for delivering products or services, the Internet enables certain products and services to be easily delivered to consumers without geographical limitations. Physical limitations were conventionally a leading determinant of purchase choice. The underlying assumption about purchase was that increases in distance were accompanied by corresponding increases in cost of purchase. Geography was the barrier. On the Web, it can be argued that every business is a global business (Quelch and Klein, 1996). Naturally, physical delivery is a key issue in many industries but digitization overcomes many of the traditional problems. Companies involved in online ticketing and reservations, digital products, financial services and consulting services have realized unparalleled advantages of online delivery (Kiang, Raghu and Shang, 2000). Product oriented businesses have also realized cost savings through the use of the Internet by eliminating huge inventories, storage costs, utilities, and space rentals (Avery, 1997), as well as, shortening supply chains and reducing commission and operating costs (Edwards, Handcock and Mullen, 1998).

2.6 Customer Relations – the 5th Principle of Internet Marketing

The focus of most companies using the Internet has been on enhancing customer relations. This concentration on customers is not surprising and is consistent with the observations of practitioners. Noted Information Technology consultant, Patricia Seybold, was quoted in Financial Times (1998) as saying, "I stumbled upon a pattern that the successful businesses were all focused on existing customers, and committed to making it easier for them to do business, either via the Web, or through better information provision." In order to adopt a market orientation, firms must first understand their customers. By constantly listening to what they have to say, observing their purchase and consumption behavior, and interacting with them

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in a dynamic environment, companies will be able to fine-tune the products and services they offer.

To accomplish the goal of delivering greater value to customers, marketers have tried to enhance their understanding of consumer needs and wants as a basis for building long-term relationships. This philosophical shift has been characterized as "relationship marketing" (Petrison, Blattberg and Wang, 1993; Sheth and Parvatiyar, 1995). The objective of relationship marketing is to build customer loyalty. Companies do this in the marketspace by building a customer information bank over time then delivering a high level of added value to customers in a variety of different ways.

2.6.1 Personalization

People appreciate the extra attention that comes from being considered special. In business, good customers are recognized and treated differently than strangers or infrequent customers. Salespeople do special things for their best customers while product managers identify frequent buyers and reward them with loyalty programs. The Internet is a powerful tool for customer personalization because it makes individual customer relationship management not just possible but achievable with thousands of people simultaneously. Through the use of memory banks, companies know customer order histories, comments, preferences and changes in taste and circumstance. Customized Web pages are one example of personalizing relationships with customers in the electronic environment. Peapod offers 'cyber shoppers' a virtual supermarket on their screens, organized any way they desire: by aisle, as they would find in their own regular store; or by their own preferred aisle arrangement: specific product categories or brands; alphabetically by brand; according to price, specials and promotions; or by nutritional

requirements, like the fat, calorie, sodium or cholesterol content in products. Amazon's key strength lies in its huge database, which recalls all of its customers' preferences and buying patterns. Amazon is able to differentiate itself using the database's ability to 'remember' customers and treat them as individuals. For example, customers who visit the Website are greeted by name and offered a list of recommended titles based on the books they have already bought. Customers can change their profile at any time; their files are updated daily, to see what they buy, for whom, and what else could interest them. Everything is geared to cater to the unique need of that individual and is continuously enhanced.

Personalization has shown signs of success from its early stages. A 1998 study by Jupiter Communications reported that customization at 25 consumer electronic commerce sites boosted new customers by 47% in the first year and revenues by 52%. Hof, Green and Himmelstein (1998) reported that personalization pays for itself within a year by increasing the loyalty of customers who use the site and that people who use personalization options come back five times as often as others and view double the number of pages.

2.6.2 Customer to Retailer Interaction

The Web is a channel that allows a company to see customers coming in the front door, observe them as they go through a site, and see where they leave. This ability to track the information that customers access on a site translates into real-time feedback. But many companies are turning directly to customers for feedback asking for their points of view on products, and comments and suggestions on a range of topics (White and Raman, 1999). The rate of innovation diffusion through the Internet is much faster than through traditional channels, and requires that firms be aware of their "time to market," and the "time to market response rate"

(Katros, 2000; Rao, 1998). Customer feedback on the Web makes previous methods of customer response equivalent to putting a note in a bottle and hoping someone will find it.

Companies are also creating opportunities for online participation in, or virtual access to, real-time in-store activities. For example, VictoriaSecret.com, the US based underwear and lingerie store, invites customers to join their online fashion show and customers of the French department store, Printemps.fr, can gain online access to specific store events.

2.6.3 Customer to Customer Interaction

Customer-to-customer interaction, whether direct or indirect, also creates value. VirtualVineyard.com's food site uses their 'Recipe Queen' to indirectly link customers. She offers recipes, cooking tips and suggestions but also posts the answers to customer's questions, comments and ideas online for other customers to view. Amazon.com and CDNow.com use customer input in the creation of their book and film reviews, to the benefit of other customers.

Companies also establish direct customer-to-customer interaction through online communities. These bring like-minded groups of people together for discussion or chats, or to participate in 'talk-forums' hosted by company representatives. Cyber-communities increase loyalty and sales and make customers feel more connected to organizations (Dutta and Segev, 1999). If companies can create a sense of community on the Web, they will have an advantage because people will come back to their site over and over again.

As people continue to use the Internet they will increasingly realize the added value it offers. As they get used to being treated as individuals, they will come to expect this both on and off the Web. Once a valuable resource held metaphorically 'at arms length', customers are now literally 'at arms length' and an integral part of the online business process. By treating

customers as partners and explicitly valuing their contributions, successful businesses in the online world will be able to create superior purchasing experiences.

2.7 Purpose and Objectives of the Study

This study was conducted to investigate the World Wide Web usage pattern of active duty Air Force personnel regarding Services information. The primary purpose of this research was to propose a Services Website design framework that integrates the information needs of active duty personnel with effective application of marketing principles. The specific objectives of this study were:

1. To identify the type of Services information active duty personnel are looking for on the Web.
2. To determine how important various online services are to active duty personnel.
3. To gauge the willingness of active duty personnel to conduct Services-specific online transactions.
4. To establish a baseline analysis of current Services Websites.

CHAPTER THREE: METHODOLOGY

3.1 Sample and Data Collection

This study was completed in two parts. First, questionnaire investigation was applied to identify the information needs of active duty personnel on Air Force Services Websites. Second, site analysis was completed on a sample of Services Websites to identify and analyze the content characteristics and application of marketing concepts.

3.1.1 Subjects of Study

Utilizing a convenience sample, a survey was conducted, at Wright-Patterson Air Force Base (WPAFB), October 9 - 23, 2000. Subjects included permanent-party, active duty military assigned to the installation. A self-administered questionnaire was distributed and collected in cooperation with the WPAFB First Sergeants Association. Five hundred seventy-six questionnaires were distributed to First Sergeants by the researcher, of which, 174 were returned without being disseminated. Of the 402 surveys that were distributed, 230 were completed and returned to unit First Sergeants and subsequently to the researcher yielding an overall response rate of 57%.

3.1.2 Instrument and Procedure

The instrument used in this research was a questionnaire adapted from a study that profiled the World Wide Web usage pattern of college students for travel information (Xu, 1999). It contained 22 questions designed to accomplish the objectives of this study. The questionnaire consisted of three main sections. The first section asked respondents about their use of and experience with the Internet. Questions pertained to Internet access, frequency of use, online purchases and level of agreement concerning general Internet Website attributes. The next set of questions inquired about their interest and use of Air Force Services Websites. Respondents were asked about their frequency of use, interest in particular Services activities, importance of information elements and level of agreement concerning Services Website attributes. The last section contained seven questions regarding demographic characteristics including education level, gender, age, military rank, marital status, number of dependents, and assigned organizational Group.

Each unit First Sergeant was given 48 questionnaires to administer randomly to eight people in each of the following rank categories: E1 – E4, E5 – E6, E7 – E9, O1 – O2, O3 – O4 and O5-O10. In the event a unit did not have eight people in a particular rank category, First Sergeants were asked to distribute the remaining questionnaires equitably across the other rank categories. The surveys included a cover letter explaining the research and an envelope labeled 'Website Survey' to return completed questionnaires in. This was done to ensure the confidentiality of respondents. The First Sergeants were asked to make a general reminder within the unit one week after distribution for the purpose of increased response rate. This follow-up was intended to be non-specific as distribution was designed to be random.

The rationale for using this distribution and collection method was threefold. First, to obtain a random yet representative sample, some familiarity with personnel, operations and

scheduling within each unit was necessary. Secondly, to preserve the voluntary participation requirement of Air Force surveys, the researcher chose to preclude any inference of imposition of rank. Finally, in order to expedite the delivery and collection of surveys, a personal approach was chosen instead of a mass mailing. First Sergeants were the logical choice as they serve as the principal advisor to unit commanders on all issues related to unit personnel, as well as, assist in the preparation and dissemination of information programs throughout the unit.

3.2 Statistical Analysis

Basic statistical analysis was conducted to describe World Wide Web use, purchase history and demographic characteristics of active duty personnel. It was also used to describe Services Website use. Means, frequencies and percentages were the measurements used to show the descriptive results of this research.

Chi-Square analysis was used to test the difference of demographic characteristics of respondents who purchased products on the Web and those who did not. It was also used to test the difference between frequencies of interest of various Services activities.

Analysis of variance was conducted to identify differences in attitude toward World Wide Websites, Services Websites and the willingness of respondents to conduct Services transactions via the Internet. The Duncan post hoc comparison test was used to further explore these differences.

3.3 Website Analysis

Through content analysis, the accessibility, design, content and application of marketing concepts were evaluated on a sample of Services Websites. Two sites were chosen randomly from seven major commands and evaluated using weighted criteria. The researcher approached each assessment using a public Internet Service Provider (ISP) to determine accessibility to .mil Websites. Four of the 14 sites had restricted access. Of these, three were in overseas locations where the increased threat may require higher security measures. Additionally, one stateside Services squadron did not have information on the installation Website. This resulted in a useable sample of eight sites from stateside installations and one from Hawaii.

CHAPTER FOUR: ANALYSIS AND RESULTS

Of the 402 questionnaires distributed by WPAFB First Sergeants, 230 were completed and returned culminating in a 57% final response rate. Given the occurrence of incomplete or missing data, the number of respondents varies by item.

4.1 Demographic Characteristics of Respondents

The respondents' demographic characteristics are presented in Table 2. At first glance, the gender split is seemingly disproportionate but is archetypal of the Air Force (AF) population. The sample, 70% male and 30% female, is slightly more liberal than the WPAFB population (79% and 21%) as well as the AF (81% and 19%). The rank categories also presented some differences in terms of representation. The E1-E3 and E4-E6 sample groups reflected approximately twice the population percentages found at WPAFB while the O3-O4 group at 11% was notably underrepresented when compared to the WPAFB population of 29%.

In terms of age, 41% of the population was in the 31 – 40 year range followed by 32% in the 22 – 30 year group. Sixty-five percent were married, however, almost half (46%) had no children under the age of 18 living with them. Education levels revealed 92% of respondents had beyond a high school diploma while 42% held a four-year degree, advanced academic coursework or advanced degrees. WPAFB is in many measures the largest, most diverse and organizationally complex base in the Air Force. Missions range from acquisitions and logistics

management, to research and development, education, and many other defense related activities. For these reasons, the large percentage of respondents assigned to 'other agencies' (38%) and the small percentage to Operations Group (2%) is not problematic.

4.2 World Wide Web Use

Of the 229 respondents who answered whether or not they had used the Web, 228 replied positively. Internet access did not appear to be a problem with 99% of respondents having access at work, 81% having access at home and 36% having access at other locations such as the library and at friend's homes. The majority of Air Force members (59%) spend between 1 and 9.9 hours on the Web per week. Another 21% spends between 10 and 19.9 hours per week. Males tended to spend longer hours on the Web per week with 19% averaging over 10 hours compared to 2% of females. Web use was moderate across the ranks with the exception of the E4-E6 and O1-O2 groups which both exceeded 20 hours per week. Web usage did not increase significantly at higher education levels, nor, decrease significantly with age. Table 3 shows the results of demographic characteristics of weekly web usage.

4.2.1 Attitudes and Opinions of the World Wide Web

Thirteen statements were designed to assess the affect of weekly Web usage on respondent's attitudes and opinions concerning the World Wide Web. Respondents were asked to indicate their agreement or disagreement with each statement using a 5-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Significant differences were found between groups who use the Web more and groups who use the Web less throughout the week. Those with 15 - 19.9 hours of use per week most strongly disagreed with the statement, "I have difficulty understanding how to use the Web for online purchases," while those with 1 - 4.9 hours of use agreed more and those who use the Web less than one hour per week agreed most strongly. Respondents who use the Web more than 20 hours per week also significantly disagreed with the statement, "I prefer conducting transactions in person as opposed to on the Web." Additionally, there were significant differences between the more than 20 hours and less than 1 hour respondents in terms of safety of paying with a credit card, confirmation of reservations or purchases and clarity of reservation and purchasing steps. In response to the statement, "I am confused by the mass of information on the Web," those who use the Web over 15 hours per week significantly disagreed with those who use it less than one hour per week. All respondents disagreed that the slowness of Websites impacted their online purchasing preference. However, those who use the Web more than 10 hours per week disagreed more strongly than those who use it less than 10 hours (Table 4).

4.2.2 World Wide Web Purchases

A total of 69% of respondents reported they had purchased some form of product on the Web. Table 5 displays the frequency of purchase in descending order and according to three product categories. Travel related products ranked first with airline tickets (45%) followed by retail products of books and music at 32% and 27%, and finally, leisure products began with sporting events at 16%. Besides those products listed in the survey, respondents identified 14 other items purchased on the Web ranging from pet products to auto parts to medical supplies.

Further analysis of demographic characteristics of respondents who purchased products on the Web and those who did not is shown in Table 6. Differences exist between purchasers and non-purchasers in rank ($X^2 = 13.68$, $p = 0.018$) and education level ($X^2 = 21.55$, $p = .003$) but not in gender or age. Eighty-eight percent of officers in the rank of O1-O2 as well as O3-O4 made Web purchases. Those respondents with 4-year degrees (84%), some graduate coursework (82%) and masters degrees (83%) exceeded overall purchases of other education levels.

4.3 Services Website Usage

Over 80% of respondents reported they had used the Web to gather Services-related information since January, 2000. Of these, 29% have searched for Services information more than 20 times (Table 7).

4.3.1 Level of Interest in Services Activities

Respondents were asked if they had used, or if they were to consider using, the Web for Services-related information which activities would interest them. The activities were classified as 1) hospitality and leisure, 2) family-related and 3) community support. Responses are listed in descending order of frequency within each category (Table 8).

Hospitality and leisure activities were the most popular with International Tickets and Tours (ITT) selected by 56% of the respondents, fitness centers by 49% and lodging and outdoor recreation were each selected by 41%.

Significant differences of interest exist between rank categories in several hospitality and leisure activities: lodging facilities ($X^2=13.47$, $p=.019$), golf courses ($X^2=15.92$, $p=.007$), skills development centers ($X^2=12.97$, $p=.024$) and enlisted clubs ($X^2=24.32$, $p=<.00$). Some

activities, by the nature of their service, dictate eligibility of use which in turn may affect interest levels. For example, enlisted clubs are specifically and solely for enlisted personnel. The junior officer corps, O1-O2, was substantially more interested than other groups in golf activities (59%) and skills development centers (41%). The junior enlisted corps, E1-E3, was much less interested in lodging (14%) than other groups. This may be because they do not have the need or opportunity to travel as the more experienced personnel have.

Community support activities were the next most popular with libraries (51%) and auto skills centers (40%) leading the way. The only significant difference of interest between age categories was in Honor Guard ($X^2=25.41$, $p=<.001$). The level of interest (42%) by E1-E3 may be due to the focused recruiting of these ranks and the benefits they receive for participation.

Differences existed between the number of dependents and all family-related activities: youth centers ($X^2=39.72$, $p=<.001$), child development centers ($X^2=26.41$, $p=<.001$), teen centers ($X^2=31.52$, $p=<.001$) and family day care providers ($X^2=20.88$, $p=.001$). Since these activities are structured around specific age groups of dependents, the differences are not surprising.

4.3.2 Importance of Information Elements on Services Websites

Respondents were asked to rate the importance of various elements and features of Services Websites. Table 9 displays the results in descending mean order. Price (4.52) was the most important element thus reaffirming the assertions made in the literature review. Contact information (4.47) and hours of operation (4.40) were followed by timely information (4.40). Timely information refers to accurate status such as the availability of lodging rooms or entertainment tickets.

Value added features such as discount information, calendar of events, membership information and eligibility, local attraction links, dynamic maps and downloadable brochures and coupons were ranked between 4.21 and 3.91. Transaction capability, such as online enrollment and registration (3.93), online purchase (3.88), and online fee payment (3.78) fell mid-range. Elements used to tangibilize products such as pictures, 3D demonstrations and audio and video (3.35) appeared to be less important to respondents.

4.3.3 Air Force Services Transactions Online

Active duty personnel were asked to rate their willingness to conduct Services-specific transactions online. A 5-point Likert scale was again used, ranging from 1 ("strongly disagree") to 5 ("strongly agree). Significant differences were found between weekly Web use and willingness to conduct transactions (Table 10).

Although all groups were inclined to make reservations for Services facilities on Services Websites, those with less than 1-hour use per week were the least inclined (3.12). Conversely, those with over 20 hours use were most willing (4.1). The same differences applied to registering or enrolling for Services-related activities. It is worth mentioning that the least willing average (3.12) and the most willing average (4.10) were exactly the same for reservations and registration/enrollment.

Overall, groups were less willing to purchase products on Services sites with averages ranging from 2.65 to 3.72. The less than 1-hour group was significantly less willing than each of the other groups. There were no significant differences in willingness to pay fees on Services Web sites, however, the averages were slightly lower (2.62 to 3.24) than those of purchasing products.

4.4 Website Analysis

A site analysis was conducted on a sample of Services Websites to determine the extent of use and effectiveness of Internet marketing by Services units. The URLs for the Services Website sample are:

Cannon Air Force Base, New Mexico	http://www.cannon.af.mil
Edwards Air Force Base, California	http://www.edwards.af.mil
Fairchild Air Force Base, Washington	http://www.fairchild.af.mil
Hickam Air Force Base, Hawaii	http://www2.hickam.af.mil
Kunsan Air Base, Korea	http://www.kunsan.af.mil
Lajes Field, Azores:	http://www.lajes.af.mil
Luke Air Force Base, Arizona	http://www.luke.af.mil
MacDill Air Force Base, Florida	http://www.macdill.af.mil
Patrick Air Force Base, Florida	http://www.patrick.af.mil
Peterson Air Force Base, Colorado	http://www.spacecom.af.mil
RAF Mildenhall, England	http://www.mildenhall.af.mil
Ramstein Air Base, Germany	http://www.ramstein.af.mil
Tyndall Air Force Base, Florida	http://www.tyndall.af.mil
Wright-Patterson Air Force Base, Ohio	http://wpsv.wpafb.af.mil

Four elements were scrutinized throughout the assessment: accessibility, design, content and application of marketing concepts. The findings are summarized below:

Accessibility. Four major search engines (Yahoo, Altavista, Excite and Lycos) were used to locate Services Websites. Although each installation site was registered, only the 15th Services Squadron at Hickam AFB was uniquely registered with all four search engines. No hyperlinks from other sites were detected. Download times were reasonable except Fairchild AFB which was extremely heavy on graphics.

Design. About 50% of the sites used pictures to tangibilize facilities and services but none offered a text-only option. Neither audio nor video have been integrated, however, a few sites had simple graphical animations that were effective. Interactivity was limited except for Luke AFB. Luke offered online forms, coupons, brochures and dynamic maps. Maps were the most common interactive feature among the other Services sites. The majority of sites were easy to navigate and had a site map or index and no spelling or grammatical errors were found.

Content. The amount of facility information varied drastically. All sites gave hours of operation and telephone numbers. Most listed prices for some but not all operations and few offered comprehensive pricing information. Online transactions were extremely limited with lodging reservations being the most common followed by online childcare enrollment at one installation. Online purchasing, fee payment and availability status were not available. Membership information and eligibility criteria were available at 30% of the sites while event calendars were available at 50%. Activity information appeared to be widely available across the sample. Hospitality and leisure activities had the highest coverage, family-related the second highest and community support the least consistent coverage. Information was organized differently across the sample with some using the Services organizational chart as a template and others using functionality. Sites that adopted the “brochure-ware” format contained the most detailed information, however, tended not to tangibilize their products or offer interactivity.

Application of Marketing Concepts. About half of the sites effectively employed positioning in their use of logos and standard font type and colors. Market segmentation was not employed well. One site segmented retiree information and two segmented youth information. Database and relationship marketing was not utilized except two instances of online surveys and

one email group list. Partnerships, however, were in evidence at 90% of the installations with both military and local organization sites.

CHAPTER FIVE: CONCLUSIONS AND DISCUSSION

5.1 Conclusions

The quest to learn more about the degree to which Air Force Services units are exploiting the unique potential of the Internet lies at the heart of this paper. The goal of this project was to explore the information needs of active duty personnel and evaluate the application of marketing principles on Services Websites. In order to achieve this, it was necessary to first, determine the needs of active duty personnel in terms of Services information, online services and online transaction capabilities and then, to establish a baseline of where Services Websites are in meeting those needs.

5.1.1 Survey Summary

Active duty personnel can be considered very regular Internet users with 99.5% of those surveyed having used the Internet and 59% spending between 1 and 9.9 hours on the Web per week. Overall, this population has a positive attitude toward the Web. The majority of respondents feel it is faster to find information on the Web and that online purchase options should be available. Almost 70% have purchased some form of product on the Web. They appear to be comfortable in searching for information and believe in its accuracy. They are also confident that online confirmation and cancellation actions are reliable.

A majority (80%) of respondents have used the Web to obtain Services information over the past year. There are significant differences of interest in Services activities as well as desired elements on Services Websites. International Tickets and Tours, libraries, fitness centers, lodging facilities and outdoor recreation centers were the highest ranked activities while the most important elements on a Services Website were price, contact information, hours of operation, timely information and discount information.

Active duty personnel are somewhat inclined to conduct Services transactions online but this inclination is slight. As more and more Air Force functions increase online capabilities and services, this propensity could be expected to increase.

5.1.2 Website Analysis Summary

Services Website accessibility is limited. Sites are not uniquely registered with search engines and several bases are not accessible from public domains. Limited accessibility may result in nonuse. Design issues faired a little better. Only half of the sites used pictures to tangibilize facilities and services, however, this element was ranked next to last in importance by active duty members. Interactivity, on the other hand, was ranked very highly by respondents. Only 1 of 10 bases featured multiple interactive features such as online forms, coupons, brochures and dynamic maps.

In terms of content, the most important item, price, was offered intermittently but comprehensive pricing information was rare. All sites listed contact information and hours of operation which were ranked 2 and 3 respectively. Online transactions were limited to lodging reservations. Although respondents were more willing to conduct reservation transactions when compared to purchase, registration/enrollment, and fee payment, they were not unwilling to

conduct the latter. Membership information/eligibility and event calendars were both important to respondents but were only offered on 30% and 50% of the surveyed sites. On the whole, Services Websites accentuated the different activities with hospitality and leisure activities receiving the most coverage, family-related activities receiving the next most coverage and community support activities the least. Respondents were most interested in hospitality and leisure activities, then most interested in community support and least interested in family-related activities.

5.2 Discussion

Now that the parameters of Services Websites have been delineated in terms of “where they are” (site analysis) and “where they need to be” (information needs), it is possible to make recommendations to improve the effectiveness of marketing application on Services Websites. Due to the multiplicity of sites evaluated, generalized recommendations following the 5Ps of Internet marketing will be discussed.

Services Products

Services products are often promoted as one of the “benefits” of being a part of the military community. In traditional mediums, many Services product attributes have not been underscored due to space and cost limitations. Services can take better advantage of this space by tangibilizing its products and providing comparisons with civilian competitors.

In terms of product customization, Services should take advantage of the interactivity of the Internet to involve customers in developing programs and services as well as the suitability of hospitality products for electronic marketing.

Services Price

Services fees and products are typically priced below local market values (i.e. recreation equipment rentals and greens fees). By providing comprehensive pricing information not only on Services products but also on local competitor products, Services can provide added value to their customers; Value in terms of timesavings, increased knowledge base and increased satisfaction. Active duty respondents indicated price as the most important element on Services Websites.

Services Promotion

Services frequently offers basewide contests and promotions which could be effectively employed on the Internet. Promotions could be developed either individually or to supplement other promotions. For instance, the Youth Center might sponsor an essay contest and accept online entries only or accept both online submissions and on-site submissions. Air Force Clubs could extend a business card lunch drawing to include those who order online. Without geographical limitations, two installations could co-sponsor a promotion even if one were overseas.

Services Place

Services has not begun to tap the potential of Websites as a distribution channel – specifically, as a transaction channel. Few sites offer online reservations or enrollment, and none of the bases in the site analysis offered online purchasing or fee payment options. A high percentage (69%) of active duty respondents have made online purchases and were somewhat receptive to online Services transactions. The majority felt that online purchase options should be available on Services sites.

Services Customer Relations

Services is in an ideal position to implement 'relationship marketing'. With a clearly defined and accessible market, building a customer information bank across activities would be fairly easy and incredibly beneficial. More than the usual demographic variables such as gender, age, interests and education segment the Air Force population. The military structure itself defines specific markets: officer, enlisted, active duty, Guard and Reserve, retirees and civilians. In a sense, "microsegmentation" has already begun but should be taken further.

By tracking Services Website use and implementing digital feedback mediums, units could better meet customer needs and desires. Services could easily offer personalization by incorporating customized Web pages for patrons and tailoring on-demand products. For instance, the golf course and ITT might partner to offer a weekend ITT trip to a golf resort and promote it specifically to customers of both activities.

Services cannot afford to **not** create online communities. From Youth Centers to Fam Camps to Air Force Clubs, the potential for added value is infinite. Cyber-communities increase loyalty and sales and because Services has a limited customer base, they rely on repeat customers.

5.3 Limitations

The major limitation of this exploratory research was the use of convenience samples. The subjects participating in the survey were permanent-party active duty personnel assigned to WPAFB. The distribution of surveys was not equitable to base population percentages according to rank. Although distribution was conducted via First Sergeants to ensure representative distribution, this same familiarity with personnel may have introduced an unconscious bias. Site

analysis was also conducted on a sample and results of this analysis cannot be generalized to all Services Websites.

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APPENDICES

APPENDIX A: Letter to First Sergeants

9 Oct 00

Dear First Sergeant,

Thank you for your support of this study which explores the information needs of Air Force Military personnel on Services Websites. The information collected will be used to develop suggestions for Air Force Services units in Website development. I am an Air Force Institute of Technology graduate student working with the 88th Services Squadron to conduct this survey.

Your help is requested in the distribution and collection of surveys in order to obtain a random and representative sample of each unit. Please distribute 8 questionnaires among military members in each of the following groups for a total of 48 surveys:

E1 – E4
E5 – E6
E7 – E9
O1 – O2
O3 – O4
O5 – O10

In the event there are not eight military members per group in your unit, please distribute the overage among the remaining groups as equitably as possible.

Air force members have been asked to complete the survey, seal it in the envelope provided to them, and return it to you by 23 October. I will attend the First Sergeants meeting the same week to collect completed surveys. If you are unable to attend the meeting, please deliver completed questionnaires to MSgt Harris prior to the meeting.

If you have any questions or need additional information, please contact me by telephone (765) 420-8520, or, by e-mail bnbinc@gte.net. Your support of this study is greatly appreciated.

Sincerely,

Bonnie S. Ward, Capt, USAF
AFIT CI Graduate Student, Purdue University

APPENDIX B: Letter to Air Force Member

9 Oct 00

Dear Air Force Member,

This study is being conducted to explore the information needs of Air Force Military personnel on Services Websites. This information will be used to develop suggestions for Air Force Services units in Website development. By participating in this study, you will help to improve the quality of Services Websites.

An Air Force Institute of Technology graduate student in conjunction with the 88th Services Squadron is coordinating this survey. **Your help is requested in the completion of this study by answering the attached survey, sealing it in the envelope provided to you, and returning it to your First Sergeant by 23 October.** It will take about 5 minutes to complete the survey. The returned questionnaire will be used for research purposes only.

This survey is being distributed through unit First Sergeants to obtain a random and representative sample of each unit. Your participation is voluntary and the confidentiality of your responses is assured. Summarized responses may be released to the public.

If you have any questions or need additional information, please contact me by telephone (765) 420-8520, or, by e-mail bnbinc@gte.net. Your participation in this study is greatly appreciated.

Sincerely,

Bonnie S. Ward, Capt, USAF
AFIT CI Graduate Student, Purdue University

APPENDIX C: Survey Questionnaire to Active Duty Air Force Member

Part I: World Wide Web Use

44

1. Do you have access to the World Wide Web (Web) at work?
 Yes No
2. Do you have access to the Web at home?
 Yes No
3. Do you have access to the Web at a location other than work or home?
 Yes No
4. Have you ever used the Web?
 Yes No (Skip to Question 10)
5. Where do you most often use the Web?
 Work Home Other _____
6. How much time would you estimate that you use the Web in a typical week?
 less than 1 hour/week 5.0 – 9.9 hours/week 15.0–19.9 hour/week
 1.0 – 4.9 hours/week 10.0 – 14.9 hours/week over 20 hours/week
7. Have you ever used the Web to make **any form** of purchase, such as those listed below?
 Yes (Check all that apply) No

<input type="checkbox"/> Books	<input type="checkbox"/> PC hardware	<input type="checkbox"/> Software
<input type="checkbox"/> Music	<input type="checkbox"/> Gifts (flowers, cards, etc.)	<input type="checkbox"/> Office Products
<input type="checkbox"/> Clothing	<input type="checkbox"/> Consumer electronics	<input type="checkbox"/> Other _____
8. Have you ever used the Web to purchase **hospitality or tourism- related** products, such as those listed below? (Check all that apply)

<input type="checkbox"/> Airline tickets	<input type="checkbox"/> Bus tickets	<input type="checkbox"/> Train tickets
<input type="checkbox"/> Cruise line tickets	<input type="checkbox"/> Local Tour tickets	<input type="checkbox"/> Hotel reservation
<input type="checkbox"/> Restaurant reservations	<input type="checkbox"/> Vacation & Tour package	<input type="checkbox"/> Car rental
<input type="checkbox"/> Theme Parks tickets	<input type="checkbox"/> Museum tickets	<input type="checkbox"/> Club tickets
<input type="checkbox"/> Sporting event tickets	<input type="checkbox"/> Theater tickets	<input type="checkbox"/> Art & cultural tickets
<input type="checkbox"/> Dance Performance tickets	<input type="checkbox"/> Music performance tickets	<input type="checkbox"/> Festival tickets
<input type="checkbox"/> Other _____		
9. Please read each statement carefully and indicate your level of agreement by circling the number which best represents your level of agreement with the statement.

5—Strongly Agree	4—Agree	3—Neither	2—Disagree	1—Strongly Disagree
I think Web sites should offer on-line purchase options				5 4 3 2 1
I have difficulty understanding how to use the Web for on-line purchases				5 4 3 2 1
It is easy to find relevant Web sites when I search the Web				5 4 3 2 1
I can't find the specific information I want on the Web sites I visit				5 4 3 2 1
Looking for information on the Web is faster than other methods				5 4 3 2 1
I prefer conducting transactions in person as opposed to on the Web				5 4 3 2 1
Paying through the Web using a credit card is safe				5 4 3 2 1
I am unsure of the reliability of canceling reservations/ purchases through the Web				5 4 3 2 1
I am comfortable with the confirmation of reservations/ purchases through the Web				5 4 3 2 1
The reservations/ purchasing steps are not clear to me				5 4 3 2 1
I believe information on the Web is accurate				5 4 3 2 1
I am confused by the mass of information on the Web				5 4 3 2 1
I don't like purchasing on the Web because of the slowness of Web sites				5 4 3 2 1

10. Since January, 2000, approximately how often have you used the Web to gather any form of Services-related information?

None
 11 - 15 times

1 - 5 times
 16 - 20 times

6 - 10 times
 More than 20 times

11. If you have used, or were to consider using the Web for Services-related information, which of the following hospitality or leisure activities would interest you? (Number only those that interest you with 1 being of most interest)

Aero Club
 Base Restaurant
 Bowling Center
 Community Activity Center
 Dining Facility

Enlisted Club
 Fam Camp - RV Park
 Fitness Center
 Golf Course
 International Tickets & Tours

Lodging
 Outdoor Recreation
 Equipment Rental
 Skeet and Trap
 Skills Dev Center

12. If you have used, or were to consider using the Web for Services-related information, which of the following family-related activities would interest you? (Number only those that interest you with 1 being of most interest)

Child Development Center
 Family Day Care

Teen Center

Youth Center

13. If you have used, or were to consider using the Web for Services-related information, which of the following community support activities would interest you? (Number only those that interest you with 1 being of most interest)

Auto Skills Center
 Graphic Arts
 Honor Guard

Human Resources (NAF)
 Library
 Mortuary Affairs

Services Readiness
 Veterinary Clinic

14. If you have used, or were to consider using the Web for Services-related information and transactions, how important would the following be to you? Circle the number that best reflects your level of importance.

5-very important	4-important	3-neither	2-unimportant	1-very unimportant
Hours of operation	5	4	3	2 1
Contact information (phone number, name, e-mail)	5	4	3	2 1
Prices (lodging room rate, restaurant menus, product prices, rental fees)	5	4	3	2 1
On-line purchase (lodging reservation, pro shop products, etc)	5	4	3	2 1
Timely information (room availability, ticket availability)	5	4	3	2 1
On-line enrollment/registration (child care, aerobic classes, special events, tee times)	5	4	3	2 1
Membership information and eligibility	5	4	3	2 1
On-line fee pay payment (membership dues, child care fees, activity fees, rental fees)	5	4	3	2 1
Pictures, 3D demonstrations, Audio, Video (facilities, programs, etc)	5	4	3	2 1
Discount information (special promotions, holiday promotions, family promotions, etc)	5	4	3	2 1
Calendar of events	5	4	3	2 1
Dynamic map (point to point driving directions)	5	4	3	2 1
Local weather report, forecast	5	4	3	2 1
List of local attractions	5	4	3	2 1
Currency converter for overseas locations	5	4	3	2 1
Downloadable brochures, coupons, etc	5	4	3	2 1
Links to other similar sites	5	4	3	2 1
Employment opportunities	5	4	3	2 1
Mission statements	5	4	3	2 1

15. Please rate each of the following statements based on your overall attitudes toward Services Web sites. Circle the number that best indicates your level of agreement.

5-Strongly Agree	4-Agree	3-Neither	2-Disagree	1-Strongly Disagree
I think Services Web sites should offer on-line purchase options	5	4	3	2
It is easy to find Services Web sites when I search the Web	5	4	3	2
I can't find the specific information I want on the Services Web sites I visit	5	4	3	2
Looking for information on Services Web sites is faster than other methods	5	4	3	2
I prefer to conduct Services transactions in person as opposed to on Services Web sites	5	4	3	2
Paying through Services Web sites using a credit card is safe	5	4	3	2
I am unsure of the reliability of canceling reservations/purchases on Services Web sites	5	4	3	2
I am comfortable with confirmation of reservations/purchases on Services Web sites	5	4	3	2
The reservation/purchasing steps on Services Web sites are not clear to me	5	4	3	2
I believe information on Services Web sites is accurate	5	4	3	2
I am confused by the amount of information on Services Web sites	5	4	3	2
I don't like visiting Services Web sites because of slow download times	5	4	3	2
I am willing to make reservations for Services facilities on Services Web sites	5	4	3	2
I am willing to purchase Services-related products on Services Web sites	5	4	3	2
I am willing to register or enroll for Services-related activities on Services Web sites	5	4	3	2
I am willing to pay Services-related fees on Services Web sites	5	4	3	2

Part III: Demographic Information

16. Highest Education Level

High School Graduate Some College
 4 Year Degree Some Graduate Coursework
 Doctoral Degree (PhD) Professional Degree (MD, JD, etc)

2 Year Degree
 Masters Degree

17. Gender

Male Female

18. Your age on your last birthday

18 – 21 years 22 – 30 years 31 – 40 years
 41 – 50 years 50 and older

19. Your current rank

E1 – E3 E4 – E6 E7 – E9
 O1 – O2 O3 – O4 O5 – O10

20. Marital Status

Married Never Married Divorced or
 Separated

21. How many dependents, age 18 and under, live with you?

None 1 2
 3 4 5 and up

22. Which Group are you currently assigned to?

Logistics Group Medical Group Operations Group
 Support Group Wing Agency Other

APPENDIX D: Compilation of Tables

Table 1. Air Force Services Activities

Hospitality and Leisure	Family-Related	Community Support
Aero Clubs	Child Development Centers	Auto Skills Centers
Base Restaurants	Family Day Care Services	Graphic Arts
Bowling Centers	Teen Centers	Honor Guard Teams
Community Activity Centers	Youth Centers	Human Resource Offices
Dining Facilities		(NAF)
Enlisted Clubs		Libraries
Farm Camps – RV Parks		Mortuary Affairs Offices
Fitness Centers		Services Readiness Flights
Golf Courses		Veterinary Clinics
International Tickets & Tours		
Lodging		
Outdoor Recreation		
Recreation Equipment Rentals		
Skeet and Trap		
Skills Development Centers		

Table 2. Demographic Characteristics of Respondents

DEMOGRAPHICS	SAMPLE		WPAFB		AF	
	n	%	n	%	n	%
Gender (n=225)						
Male	159	70%	4,571	79%	282,553	81%
Female	66	30%	1,212	21%	65,991	19%
Rank (n=223)						
E1 – E3	29	13%	1,009	17%	132,285	38%
E4 – E6	92	41%	1,394	24%	111,031	32%
E7 – E9	44	20%	561	9%	37,480	11%
O1 – O2	17	8%	689	12%	15,449	4%
O3 – O4	26	11%	1,605	29%	38,467	11%
O5 – O10	15	7%	525	9%	13,833	4%
Education Level (n=226)						
High School	18	8%				
Some College	74	33%				
2 Year Degree	39	17%				
4 Year Degree	32	14%				
Some Graduate Work	17	7%				
Masters Degree	36	16%				
Doctoral Degree	4	2%				
Professional Degree	6	3%				
Age in years (n=226)						
18 – 21	19	8%				
22 – 30	71	32%				
31 – 40	92	41%				
41 – 50	41	18%				
51 and above	3	1%				
Marital Status (n=227)						
Married	148	65%				
Never Married	53	23%				
Divorced or Separated	26	12%				
Dependents (n=226)						
None	105	46%				
One	38	17%				
Two	45	20%				
Three	25	11%				
Four	7	3%				
Five and above	6	3%				
Group (n=225)						
Logistics	30	13%				
Medical	65	29%				
Operations	4	2%				
Support	38	17%				
Wing Agency	3	1%				
Other	85	38%				

Table 3. Demographic Char

DEMOGRAPHICS	<1 Hour		1-4.9 Hours		5-9.9 Hours	
	n	%	n	%	n	%
Weekly Web Use (n=228)						
Less than 1 hr/wk	37	.16	87	.38		
1-4.9 hrs/wk						
5-9.9 hrs/wk						
10-14.9 hrs/wk						
15-19.9 hrs/wk						
More than 20 hrs/wk						
Gender (n=223)						
Male	21	.09	54	.24	34	
Female	15	.07	30	.13	13	
Rank (n=221)						
E1 – E3	6	.03	9	.04	9	
E4 – E6	19	.09	40	.18	16	
E7 – E9	5	.02	17	.08	7	
O1 – O2	0	.00	2	.01	5	
O3 – O4	3	.01	7	.03	8	
O5 – O10	2	.01	11	.05	1	
Education Level (n=224)						
High School	4	.02	8	.04	4	
Some College	12	.05	27	.12	14	
2 Year Degree	5	.02	17	.08	8	
4 Year Degree	5	.02	10	.04	9	
Some Grad Coursework	1	.00	4	.02	4	
Masters Degree	7	.03	14	.06	8	
Doctoral Degree	0	.00	3	.01	0	
Professional Degree	1	.00	3	.01	0	
Age (n=224)						
18 – 21 years	3	.01	5	.02	7	
22 – 30 years	12	.05	24	.11	16	
31 – 40 years	14	.06	36	.16	18	
41 – 50 years	6	.03	20	.09	6	
51 and above	1	.00	0	.00	0	

Table 3. Demographic Characteristics of Weekly Web Users

<1 Hour		1-4.9 Hours		5-9.9 Hours		10-14.9 Hours		15-19.9 Hours		20+ Hours	
n	%	n	%	n	%	n	%	n	%	n	%
37	.16	87	.38	47	.21	35	.16	12	.05	10	.04
21	.09	54	.24	34	.15	29	.13	11	.05	9	.04
15	.07	30	.13	13	.06	5	.02	1	.00	1	.00
6	.03	9	.04	9	.04	3	.01	1	.00	0	.00
19	.09	40	.18	16	.07	5	.02	6	.03	6	.03
5	.02	17	.08	7	.03	10	.05	3	.01	1	.00
0	.00	2	.01	5	.02	6	.03	2	.01	2	.01
3	.01	7	.03	8	.04	7	.03	0	.00	1	.00
2	.01	11	.05	1	.00	1	.00	0	.00	0	.00
4	.02	8	.04	4	.02	2	.01	0	.00	0	.00
12	.05	27	.12	14	.06	8	.04	7	.03	5	.02
5	.02	17	.08	8	.04	5	.02	2	.01	1	.00
5	.02	10	.04	9	.04	5	.02	2	.01	1	.00
1	.00	4	.02	4	.02	5	.02	1	.00	2	.01
7	.03	14	.06	8	.04	6	.03	0	.00	1	.00
0	.00	3	.01	0	.00	1	.00	0	.00	0	.00
1	.00	3	.01	0	.00	2	.01	0	.00	0	.00
3	.01	5	.02	7	.03	4	.02	0	.00	0	.00
12	.05	24	.11	16	.07	7	.03	5	.02	6	.03
14	.06	36	.16	18	.08	14	.06	7	.03	3	.01
6	.03	20	.09	6	.03	7	.03	0	.00	1	.00
1	.00	0	.00	0	.00	2	.01	0	.00	0	.00

tics of Weekly Web Users

10-14.9 Hours		15-19.9 Hours		20+ Hours		Total		Total	
n	%	n	%	n	%	n		n	%
35	.16	12	.05	10	.04	37		37	.16
						87		87	.38
						47		47	.21
						35		35	.16
						12		12	.05
						10		10	.04
29	.13	11	.05	9	.04	158		158	.71
5	.02	1	.00	1	.00	65		65	.29
3	.01	1	.00	0	.00	29		29	.13
5	.02	6	.03	6	.03	92		92	.42
10	.05	3	.01	1	.00	43		43	.19
6	.03	2	.01	2	.01	17		17	.07
7	.03	0	.00	1	.00	26		26	.12
1	.00	0	.00	0	.00	15		15	.07
2	.01	0	.00	0	.00	18		18	.08
8	.04	7	.03	5	.02	73		73	.33
5	.02	2	.01	1	.00	38		38	.17
5	.02	2	.01	1	.00	32		32	.14
5	.02	1	.00	2	.01	17		17	.08
6	.03	0	.00	1	.00	36		36	.16
1	.00	0	.00	0	.00	4		4	.02
2	.01	0	.00	0	.00	6		6	.02
4	.02	0	.00	0	.00	19		19	.08
7	.03	5	.02	6	.03	70		70	.31
14	.06	7	.03	3	.01	92		92	.42
7	.03	0	.00	1	.00	40		40	.18
2	.01	0	.00	0	.00	3		3	.01

Table 4. Effect of Weekly Web Use on Attitudes and Opinions

STATEMENT OF INTEREST	Sum of Squares	df	Mean Square	F	Sig
I think Web sites should offer on-line purchase options	23.953 176.826 200.781	5 218 223	4.791 .811	5.906	.000*
I prefer conducting transactions in person as opposed to on the Web	12.458 227.470 239.929	5 219 224	2.492 1.039	2.399	.038*
Paying through the Web using a credit card is safe	35.418 211.471 246.889	5 220 225	7.084 .961	7.369	.000*
I am comfortable with the confirmation of reservations/purchases through the Web	18.340 158.700 177.040	5 219 224	2.835 .746	3.799	.003*
The reservation/purchasing steps are not clear to me	14.174 163.408 177.582	5 219 224	2.835 .746	3.799	.003*
I don't like purchasing on the Web because of the slowness of Websites	9.717 146.843 156.560	5 219 224	1.943 .671	2.898	.015*

* Significantly different at $p = .05$

Table 5. Rank of Products Purchased on the Web

RANK	TRAVEL PRODUCTS	RETAIL PRODUCTS	LEISURE PRODUCTS	N	%
1	Airline Tickets			104	45
2		Books		74	32
3		Music		61	27
4	Hotel Reservations			58	25
5		Gifts		57	25
6		Software		55	24
7		Hardware		48	21
8		Clothing		41	18
9	Car Rentals			40	17
10			Sports Event Tickets	37	16
11		Electronics		31	13
12		Office Products		29	13
13		Other		23	10
14			Theater Tickets	21	9
15			Theme Park Tickets	17	7
16			Vacation Packages	12	5
17			Festival Tickets	7	3
18	Train Tickets			5	2
19			Dance Perf Tickets	5	2
20			Restaurant Res	4	2
21			Cultural Tickets	4	2
22			Cruise Line Tickets	3	1
23			Local Tour Tickets	3	1
24			Museum Tickets	3	1

Table 6. Demographic Characteristics of Web Purchasers and Non-purchasers

DEMOGRAPHICS	Purchaser		Non-Purchaser		Total		X ²	df	p
	n	%	n	%	n	%			
Gender (n=224)									
Male	114	.51	45	.20	159	.71			
Female	41	.18	24	.11	65	.29	1.23	1	.267
Rank (n=222)									
E1 – E3	21	.09	8	.04	29	.13			
E4 – E6	53	.24	39	.18	92	.41			
E7 – E9	31	.14	12	.05	43	.19			
O1 – O2	15	.07	2	.01	17	.08			
O3 – O4	23	.10	3	.01	26	.12			
O5 – O10	11	.05	4	.02	15	.07	13.68	5	.018*
Education Level (n=225)									
High School	6	.03	12	.05	18	.08			
Some College	47	.21	27	.12	74	.33			
2 Year Degree	27	.12	11	.05	38	.17			
4 Year Degree	14	.06	3	.01	17	.08			
Some Grad	30	.13	6	.03	36	.16			
Coursework	3	.01	1	.00	4	.02			
Masters Degree	3	.01	3	.01	6	.03	21.55	7	.003*
Doctoral Degree									
Professional Degree	14	.06	5	.02	19	.08			
	45	.20	26	.12	71	.32			
Age (n=225)									
18 – 21 years	65	.29	27	.12	92	.41			
22 – 30 years	30	.13	10	.04	40	.18			
31 – 40 years	2	.01	1	.00	3	.01	2.04	4	.728
41 – 50 years									
51 and above									

* Significantly different at p = .05

Table 7. Frequency of Web Use to Obtain Services Related Information

SEARCH FREQUENCY (n=229)	N	%
None	40	17
1 – 5 times	59	26
6 – 10 times	29	13
11 – 15 times	16	7
16 – 20 times	19	8
Over 20 times	66	29

Table 8. Level of Interest in Services Activities

ACTIVITY	Interest		No Interest		X ²	df	p
	n	%	n	%			
Hospitality and Leisure Activities by Rank							
International Tickets and Tours	124	.56	99	.44	7.72	5	.172
Fitness Centers	110	.49	113	.51	6.34	5	.274
Lodging Facilities	92	.41	131	.59	13.47	5	.019*
Outdoor Recreation Centers	92	.41	131	.59	2.46	5	.783
Equipment Rental Centers	65	.29	158	.71	4.02	5	.546
Golf Courses	52	.23	171	.77	15.92	5	.007*
Skills Development Centers	51	.23	172	.77	12.97	5	.024*
Bowling Centers	45	.20	178	.80	4.60	5	.148
Community Activity Centers	39	.18	184	.82	6.68	5	.245
Enlisted Clubs	38	.17	185	.83	24.32	5	<.001*
Fam Camps	28	.13	194	.87	5.20	5	.392
Dining Facilities	26	.12	197	.88	10.92	5	.053*
Aero Clubs	20	.09	201	.91	6.45	5	.265
Skeet and Trap Facilities	19	.09	204	.91	4.60	5	.467
Family-Related Activities by Dependents							
Youth Centers	56	.25	170	.75	39.72	5	<.001*
Child Development Centers	55	.24	171	.76	26.41	5	<.001*
Teen Centers	43	.19	183	.81	31.52	5	<.001*
Family Day Care Providers	36	.16	189	.84	20.88	5	.001*
Community Support Activities by Age							
Libraries	115	.51	111	.49	.75	4	.946
Auto Skills Centers	91	.40	132	.60	4.47	4	.347
Veterinary Services	60	.27	166	.73	6.14	4	.189
Graphic Services	52	.23	174	.77	5.87	4	.209
NAF Human Resource Offices	45	.20	181	.80	5.57	4	.234
Honor Guard	23	.10	203	.90	25.41	4	<.001*
Readiness in Base Services	18	.08	207	.92	2.05	4	.726
(RIBS)	11	.05	215	.95	4.98	4	.289
Mortuary Affairs							

* Significantly different at p = .05

Table 9. Level of Interest in Services Website Information

INFORMATION ELEMENT	MEAN	SD
Prices	4.52	.69
Contact information	4.47	.71
Hours of operation	4.40	.77
Timely information	4.40	.77
Discount information	4.21	.85
Calendar of events	4.20	.78
Membership information and eligibility	3.96	.91
Local attractions	3.96	.90
Online enrollment and registration	3.93	1.01
Dynamic map	3.93	.99
Downloadable brochures and coupons	3.91	.94
Online purchase	3.88	1.03
Links to other sites	3.83	.87
Online fee payment	3.78	1.09
Local weather	3.62	1.04
Employment opportunities	3.61	1.14
Currency converter	3.48	1.15
Pictures, 3D demos, audio, video	3.35	1.06
Mission statements	2.86	1.16